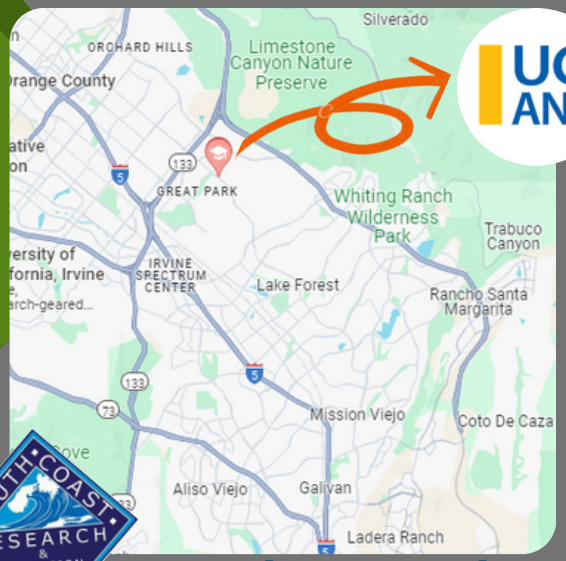
Considerations (continued)

Location

- AVOID placing permeable pavements on high pollutant sites or locations with constant trash or debris. Unless regular vacuuming is feasible, refrain from installing in locations affected by windborne dust/sediment.
- Prioritize regions that are pedestrian and vehicular transport-friendly.
  - Areas with low-volume roads, low-speed zones, overflow parking, residential driveways, alleys, and parking stalls.
- Setback and separation guidelines for permeable pavements require a minimum horizontal distance of 50 feet (100 feet recommended) between water supply wells and your installation. Regarding vertical separation, there must be at least 3 feet of undisturbed soil between the bottom of the permeable pavement reservoir layer and bedrock.

Water SUPPLY SECURITY



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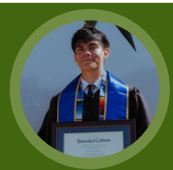

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Permeable Materials

A Sustainable Approach to Stormwater

WATER SUPPLY SECURITY

Stormwater Management via NBS #5

Definition & Types of PERMEABLE PAVEMENTS

- **Permeable pavements** are a water-resilient alternative to traditional paved surfaces, allowing rainwater to infiltrate the ground. This best management practice supports both municipal and private developments by effectively managing stormwater while providing functional surfaces for transportation and recreation within urban landscapes across Southern California.
- Ideal for driveways, parking lots, and patios, the main categories fall into...
  - **Porous Asphalt/Pervious Concrete:** Modified forms of asphalt and concrete material that contain less fine aggregates, allowing for better water passage.
  - **Permeable Paver Systems/(PICP):** Designs comprising pavers with gaps that facilitate water flow, underpinned by highly porous gravel layers serving as reservoirs.
  - **Turf Block/Grass Block Systems:** They are similar to PICPs but with soil-filled spaces for planting grass or groundcover.

Benefits of Permeable Pavements for REDUCING SURFACE RUNOFF

Reducing surface runoff
- A larger surface area of porous material allows more water to infiltrate urban soils and less stormwater discharges to occur.
- Lowers chances of erosion, flooding, hydroplaning, and splashing of pollutant-holding vehicle undercarriages.

Preventing damage to drainage systems
- By reducing risk of sewer backups from runoff overflow.

Improved water quality
- The gravel layered below permeable asphalt, pavers, or concrete also filters contaminants to improve water quality of groundwater recharge basins and surface water bodies.

Fire safety
- Help reduce the urban heat island effect through enhanced infiltration and evaporation, which would cool down the surface and surrounding air.
- Can prevent flooding that may impede fire trucks or other emergency vehicles in pursuit of fires.
- Stormwater captured by and stored under porous asphalts could serve as a valuable resource for fire suppression in areas with limited water supply.

Successful Permeable Pavement Projects

Permeable Surfaces DESIGN & INSTALLATION CONSIDERATIONS

Permeable pavements consist of the **surface layer** and **subsurface layer** with each layer comprising unique material compositions and levels of thickness. Surface layers typically range between 2 to 4 inches of thickness with added polymers or admixtures to increase strength for handling heavier load applications and/or enhancing stormwater management properties. Subsurface layer design can vary substantially depending on your choice of permeable pavement type along with the project-specific requirements. However, all permeable pavement types should consider the following factors when designing and prior to installation: slope, location, and maintenance of the area.

Slope
- Surfaces should exhibit slopes no greater than 5%. Steeper slopes can cause pavement to shift and reduce its ability to manage stormwater.
- Slope of a pavement must not lead to water flow occurring out of the stone reservoir layer onto lower portions of the pavement surface.

Area Maintenance
- Permeable surfaces must be cleaned regularly to prevent clogging from sand, sediment, and debris.
- Vacuuming at least twice a year can help maintain permeability.
- Site developers should consider the infiltration capacity of particular pavement types. Inlets can be incorporated to accommodate for occasional field clogging or overflows from extreme storm events.